UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/344,688	06/25/1999	ARTHUR ALLEN	BW-02	9340

21839	7590	09/22/2006

BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER
ZIA, SYED

ART UNIT	PAPER NUMBER
2131	

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *12 June 2006*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-14* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-14* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>04/2003</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to amendment and request for reconsideration filed on

June 12, 2006. Original application contained Claims 1-14. Applicant currently amended Claims

1-14. The amendment filed on June 12, 2006 have been entered and made of record. Therefore,

Claims 1-14 are pending for consideration.

Response to Arguments

Applicant's arguments with respect to claim 1-14 have been considered but are moot in

view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al.

(U. S. Patent 6,052,384), and further in view of Mitra et al. (U. S. Patent 6,331,986).

Regarding Claim 1, 9,and 14 Huang teaches a method for optimal multimedia content delivery over networks from a server to one or more clients, comprising: delineating a state variable that represents the data rate to each client; delineating a set of requirement conditions which represent the time varying constraints on the data rate of said multimedia contents (col.3 line 50 to col.4 line 34, and col.8 line 1 to col.11 line 20) said conditions including:

Although the system disclosed by Huang shows all the features of the claimed limitation, but Huang does not specifically disclose performing periodic computations in compliance with claimed conditions to obtain a state value that maximizes a cost function.

In an analogous art, Mitra, on the other hand discloses computing environment that relates to finding; the total data rate for all clients does not exceed the maximum throughput of the server or network, whichever is least; the data rate from server to client does not exceed the maximum data rate for the client; the data rate of the client will never overflow the client buffer; the server will never underflow; and the data rate from the server will never be less than the client's minimum data rate, which is a non-increasing function of time obtained by dividing the content not yet delivered by the remaining play time; delineating a cost function which represents the value of a proposed solution and performing periodic computations in compliance with conditions to obtain a state value that maximizes said cost function (col.3 line 35 to col.4 line 48 to line 67, and col.11 line 50 to col.14 line 5).

Therefore, It would have been obvious to one ordinary skilled in the art at the time of invention to combine the teachings of Huang and Mitra, because Mitra's method of resource allocation and routing in multi-service networks would not only promote optimal routing and optimal

bandwidth allocation in Huang network that supports plural sub-networks and plural

communication services during receiving data from host computing devices but will also

distribute traffic among available routes and allocating bandwidth resources to such routes in

communication networks of that kind.

As per claim 2, wherein said conditions further include the current maximum client data

rate is given by the minimum of: the stored initial maximum client data rate; the data rate

required to fill the remaining client buffer during the current of said periodic computations; the

data rate required to complete the delivery of said multimedia content; the client data rate never

exceeds said current maximum client data rate, whereby said current maximum client data rate is

periodically recomputed to maintain an optimal solution over a given period of time (Mitra: col.3

line 35 to col.4 line 48 to line 67, and col. 11 line 50 to col.14 line 5).

As per claim 3, wherein: said cost function represents maximal throughput and is given

by the sum of said client data rates for all active clients (Mitra: col.3 line 35 to col.4 line 48 to

line 67, and col. 11 line 50 to col.14 line 5).

As per claim 4 wherein: said cost function represents maximal charge and is given by the

sum for all active clients of said client data rates times the client's cost of service (Mitra: col.3

line 35 to col.4 line 48 to line 67, and col. 11 line 50 to col.14 line 5).

As per claim 5, for bandwidth allocation for delivery of multimedia data from server to

one or more clients over a network, comprising the steps of: determining the maximum flow rate

and minimum flow rate for each client; determining the flow rate range for each client as given

by the difference between said maximum flow rate and said minimum flow rate; initializing

current flow rate for each client as said minimum flow rate and summing said flow rate into total

server flow rate; and allocating remaining server bandwidth to remaining clients until they each

saturate or no bandwidth remains (Mitra: col.3 line 35 to col.4 line 48 to line 67, and col. 11 line

50 to col.14 line 5) .

As per claim 6, wherein said step of allocating remaining server bandwidth to remaining

clients comprising: sorting the list of clients according to said flow rate range; determining

equally-allocated remaining server bandwidth if allocated evenly to all remaining unprocessed

clients; determining the range of remaining client bandwidth as given by the difference between

said maximum flow rate and said minimum flow rate; and determining saturation by comparing

said equally-allocated remaining server bandwidth and said range of remaining client bandwidth,

and allocating the lesser of these two amounts to each remaining client flow rate; whereby

allocating flow to remaining clients based upon the sorted client range flow rates and

determining allocation of remaining server bandwidth based upon a comparison of saturation of

server versus saturation of each client maximizes allocation of total bandwidth for maximal flow

rate to maximum number of clients (Mitra: col.3 line 35 to col.4 line 48 to line 67, and col. 11

line 50 to col.14 line 5).

As per Claim7, for bandwidth allocation for delivery of multimedia data from server to

one or more clients over a network, comprising the steps of: determining the maximum flow rate

and minimum flow rate for each client; determining the flow rate range for each client as given

by the difference between said maximum flow rate and said minimum flow rate; sorting the list

of clients according to said flow rate range; initializing current flow rate for each client as said

minimum flow rate and summing said flow rate into total server flow rate; and_ allocating

remaining server bandwidth to remaining clients such that lower paying clients receive

bandwidth only if higher paying ones are saturated (Huang: col.3 line 35 to col.4 line 48 to line

67, and col.11 line 50 to col.14 line 5, and Mitra: col.3 line 35 to col.4 line 48 to line 67, and

col. 11 line 50 to col.14 line 5).

As per Claim8, wherein said step of allocating remaining server bandwidth to remaining

clients comprises the steps of: for each remaining unprocessed client: determining

equally-allocated remaining server bandwidth if allocated evenly to all remaining unprocessed

clients; determining the range of remaining client bandwidth as given by the difference between

said maximum flow rate and said minimum flow rate; determining saturation by comparing said

equally-allocated remaining server bandwidth and said range of remaining client bandwidth, and

allocating the lesser of these two amounts to each remaining client flow rate; and whereby

allocating flow to remaining clients based upon the sorted client range flow rates and

determining allocation of remaining server bandwidth based upon a comparison of saturation of

server versus saturation of each client maximizes allocation of total bandwidth for maximal flow

rate to maximum number of clients ((Huang: col.3 line 35 to col.4 line 48 to line 67, and col.11

line 50 to col.14 line 5, and Mitra: col.3 line 35 to col.4 line 48 to line 67, and col. 11 line 50 to

col.14 line 5).

As per Claim 10, wherein said remaining bandwidth available to the server is given by

said server swing capacity (Huang: col. 15 line 10 to col.17 line 55).

As per Claim 11, wherein said remaining bandwidth available to the server is give by said

server swing capacity less a server flow safety margin, thereby allowing server capacity to be

subsequently lowered by up to the safety margin without requiring load shedding, and without

affecting client sessions in process (Huang: col. 19 line 5 to line 38, and col.20 line 4 t line 29).

As per Claim 12, wherein said step of allocating server bandwidth for each prospective

client which will fit without server bandwidth saturation comprises: allocating server bandwidth

to each prospective client sequentially until a prospective client is located in which said average

data play rate exceeds said server swing capacity (Huang: col. 13 line 40 to col.14 line 45).

As per Claim 13, wherein said step of allocating server bandwidth for each client which

will fit without server bandwidth saturation comprises: allocating server bandwidth to each

prospective client sequentially for each client which can be activated without server bandwidth

saturation ((Huang: col. 15 line 10 to col.17 line 55).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine
grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or
improper timewise extension of the "right to exclude" granted by a patent and to prevent possible
harassment by multiple assignees.   A nonstatutory obviousness-type double patenting rejection
is appropriate where the conflicting claims are not identical, but at least one examined
application claim is not patentably distinct from the reference claim(s) because the examined
application claim is either anticipated by, or would have been obvious over, the reference
claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re
Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225
USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re
Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163
USPQ 644 (CCPA 1969).
A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may
be used to overcome an actual or provisional rejection based on a nonstatutory double patenting

ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1-14 of instant application 09,344,688 (hereafter '688) are rejected under the judicially

created doctrine of obviousness-type double patenting as being unpatentable over claims 1-33 of

U. S. Patent No. 6,850,965 (hereafter '695). Although the conflicting claims are not identical,

they are not patentably distinct from each other because all the limitations of claims 1-14 of '688

are found in claim 1-33 of '695.

Therefore, Claims 1-14 of '688 are anticipated by claim 1-33 of '695 because all the

limitation of broader genus claims of '688 are contained in the narrower species claims of '695,

as enunciated in ELI LILLY AND COMPANY v BARR LABORATORIES, INC., United

States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN

BANC (DECIDED: May 30, 2001).

"A later patent claim is not patentably distinct from an earlier patent claim if the later

claim is obvious over, or **anticipated by**, the earlier claim. In re Longi, 759 F.2d at 896,

225 USPQ at 651 (affirming a holding of obviousness-type double patenting because

the claims at issue were obvious over claims in four prior art patents); In re Berg, 140

F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obviousness-

type double patenting where a patent application claim to a genus is anticipated by a

patent claim to a species within that genus). " ELI LILLY AND COMPANY v BARR

LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON

PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001).

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Syed Zia whose telephone number is 571-272-3798. The

examiner can normally be reached on 9:00 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ayaz Sheikh can be reached on 571-272-3795. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

sz

September 02. 2006